

RCRA FACILITY FACT SHEET

Union Pacific Railroad Laramie Tie Plant Site

221 Hodgeman
Laramie, Wyoming 82072

FACILITY BACKGROUND

The Laramie Tie Plant Site is located in Albany County, just south of the City of Laramie, Wyoming. The site is adjacent to the Laramie River, near the intersection of Interstate 80 and U.S. Highway 287. The Union Pacific Railroad (UPRR) operated the Laramie Tie Plant Site for the treatment of railroad ties and other wood preserving operations on an intermittent basis from 1886 to 1983. Creosote was the primary wood-preserving agent used at the site. Pentachlorophenol was also used for a limited time, but in smaller amounts. Direct discharges of wastewater to low-lying areas, along with drippage and spills associated with wood preserving operations caused extensive contamination of soils and groundwater at the site.

Since the decommissioning of the Laramie Tie Plant Site in 1983, UPRR has investigated, monitored and implemented remedial actions and stabilization measures as described in the Corrective Action Section of this Fact Sheet. In 1995, UPRR was required to submit an application for a Resource Conservation and Recovery Act (RCRA) permit for post-closure care and corrective action. The permit application was submitted by UPRR on September 1, 1995. The Department of Environmental Quality (DEQ) issued a Post-Closure and Corrective Action Permit (Permit) that became effective on July 18, 1999. The Permit requires long-term site management for the partially closed surface impoundment and corrective action for the hazardous waste or hazardous constituents left in place at the site. Part of the long-term site management obligations in the permit include the use of an innovative remediation technology called phytoremediation. The Permit contains the approved Integrated Phytoremediation/Greenbelt Project Work Plan which details how UPRR will establish, maintain and monitor the areas undergoing phytoremediation. The UPRR completed the tasks necessary to open the greenbelt in 2001, including a permit modification approved on July 3, 2001. The permit expired in July, 2009, and the Laramie Tie Plant Site submitted a Permit Renewal Application to DEQ on January 16, 2009. A Final Permit was issued on July 18, 2009 and will expire in July, 2019.

ENVIRONMENTAL CONCERNS

In 1981 when groundwater contamination was discovered, there were concerns which included the following:

- Millions of gallons of used wood preserving oils had accumulated in the subsurface in the form of a mobile dense, nonaqueous phase liquid (DNAPL).
- The DNAPL and contaminated groundwater was seeping into the adjacent Laramie River, which flows downstream through the City of Laramie.
- The extent of groundwater contamination associated with the DNAPL was unknown, and there were concerns that private and public sources of drinking water could potentially be impacted.
- Contamination present at the site, particularly oily wastewaters and sludges present in four surface impoundments, posed potential risks to wildlife, including migratory waterfowl.

The UPRR has completed certain investigative efforts and remedial actions. Through these actions, contaminants no longer seep into the Laramie River, groundwater and ecological risks have been addressed, and a portion of the site has been returned to beneficial reuse in a manner protective of human health and the environment.

CORRECTIVE ACTION

Investigative and remedial efforts at the site have been conducted pursuant to both the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and RCRA. The chronology of these efforts is summarized as follows:

1983. UPRR decommissioned the facility, demolished on-site buildings, shipped unused wood preserving materials to another facility, constructed a flood control dike protecting the site from a 100-year flood and installed sheet pile cutoff walls to curtail discharges of DNAPL into the Laramie River. UPRR also initiated investigations into the nature and extent of environmental contamination at the site.

1984. Partial closure of the surface impoundment was conducted in accordance with a RCRA Administrative Order on Consent entered into by EPA and UPRR.

1985-1987. To prevent the migration of site contaminants offsite, UPRR designed and constructed the Contaminant Isolation System (CIS) during 1985 to 1987. The CIS included: 1) relocation of the Laramie River to an uncontaminated channel; 2) construction of a bentonite slurry cutoff wall around a 140-acre area that contains the bulk of the site contamination; 3) installation of a water management system to maintain an inward groundwater flow direction; 4) construction of a water treatment plant to remove dissolved contaminants; and 5) implementation of a monitoring program to ensure the effectiveness of the CIS.

1988. UPRR installed an additional groundwater extraction system to address a small zone of bedrock groundwater contamination located outside the CIS. This system is called the Morrison Contaminant Withdrawal System.

1986-1989. UPRR conducted extensive pilot-scale treatment studies termed the In-Situ Treatment Process Development Program to evaluate the implementability and effectiveness of several innovative cleanup technologies.

1991. UPRR began full-scale application of a waterflood DNAPL recovery technology at the site. This technology was developed and demonstrated in the pilot-scale testing program. The technology is being applied in modular fashion across the 60-acre area of the site containing recoverable DNAPL.

1993. UPRR completed additional site investigations and technology evaluations required to select a final site remedy, and reported the findings in the Corrective Measures Study which was completed in November 1993.

1994. EPA selected the final remedy based on the Corrective Measures Study. The final remedy included long-term operation of previously implemented containment systems, ongoing application of the waterflood DNAPL recovery method, a RCRA cap, and soil cover.

1997. During the RCRA permitting process, UPRR presented plans for an Integrated Phytoremediation/Greenbelt Project. This project combined phytoremediation with construction of a Laramie River greenbelt trail. The objective of the project is to achieve near-term beneficial use of the site with long-term site cleanup.

1999. The Integrated Phytoremediation/Greenbelt Project Work Plan was approved by DEQ. UPRR initiated phytoremediation activities with construction of an irrigation system and planting of 1500 trees in a portion of the site. UPRR also constructed a greenbelt trail linking a City of Laramie Park with the site. Also in 1999, DEQ issued the Post-Closure and Corrective Action Permit. In 1999, EPA removed the UPRR Tie Plant Site from the National Priorities List under CERCLA.

2000 to Present. UPRR continues operation of the containment systems, monitoring groundwater, implementing removal of DNAPL through waterflood recovery, conducting phytoremediation activities (e.g., planting and monitoring growth, monitoring soil conditions), conducting ecological surveys, as well as other activities required to maintain the site.

ENVIRONMENTAL INDICATORS

Environmental Indicators ("EI's") are an EPA measure used to determine if contamination is being mitigated at or from facilities. RCRA authorized States, such as Wyoming, make the determination whether a facility has met the EI's, and that information is reported to EPA. There are two Environmental Indicators: 1) "Human Health Exposures Under Control"; and 2) "Migration of Contaminated Groundwater Under Control". Currently, for the UPRR Laramie Tie Plant Site, the State has determined the Human Health Exposure and Migration of Contaminated Groundwater are under control.

PUBLIC INTEREST

Throughout the investigation and remedial actions at the Laramie Tie Plant Site, UPRR has developed and used a community involvement plan to inform neighbors and residents of the City of Laramie about the cleanup occurring at the site. UPRR and EPA had developed and distributed fact sheets, video and public notices to help citizens understand the actions occurring at the site. UPRR has also conducted tours of the site, and since 1999 the tours have included the greenbelt area where phytoremediation is being used to further treat soil and groundwater contaminants.

The UPRR built a bike path to the Laramie Tie Plant Site and the greenbelt in 1999. Through a number of public meetings and workshops, UPRR solicited the input and involvement of the local community. The opening of the bike path occurred on November 6, 1999. UPRR has expanded the bike path onto the greenbelt area of the site, which opened to the public in August 2001.

FOR MORE INFORMATION

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